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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,258

11/19/2003

Robert Tornoe

EIMC-0019

8165

7590

09/19/2006

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EXAMINER

CANNING, ANTHONY J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,258

Applicant(s)

TORNOE ET AL.

Examiner

Anthony J. Canning

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement of Request for Continued Examination

1. The request for continued examination for the instant application was entered on 11 July 2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1, 3, 5 and 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Byram et al. (U.S. 5,493,178; of record).
4. As to claim 1, Byram et al. discloses an electron tube (see Fig. 1; column 2, lines 66-67); including: an electrically insulating wall portion (see Fig. 1, item 12; column 3, lines 64-66); a multistage collector (see Fig. 1, item 10; column 3, lines 61-63) including: a first electrode (see Fig. 1, item 16; column 4, lines 12-13) adapted to collect electrons (column 1, lines 26-29 and column 1, lines 47-50; collector electrodes are by definition electrodes in an electron tube that collects electrons that have finished carrying current) of a first energy level impacting the first electrode (column 1, lines 47-50) the first electrode formed on an inside portion of the insulating wall portion (see Fig. 1, item 12; column 4, lines 5-8) and including a metallization layer formed

on the inside portion of the insulating wall portion (column 5, lines 1-4); a second electrode (see Fig. 1, item 28; column 4, line 34-35) adapted to collect electrons (column 1, lines 26-29 and column 1, lines 47-50; collector electrodes are by definition electrodes in an electron tube that collects electrons that have finished carrying current) of a second energy level impacting the second electrode (column 1, lines 47-50); and an insulating portion (see Fig. 1, item 20; the space shown at item 20 is a space between two electrodes, the space between electrodes forms an insulating portion between the two electrodes) for electrically isolating the first and second electrodes from one another (the space between electrodes acts to electrically isolate the first from the second electrode); and an electrical path (see Fig. 1, item 22; column 4, lines 20-23) coupling the first electrode to a terminal on an exterior of the tube (paragraph 4, lines 20-23).

5. As to claim 3, Byram et al. disclose an electron tube in accordance with claim 1. Byram et al. further disclose that the electrically insulating wall portion comprises a ceramic material (column 3, lines 64-66).

6. As to claim 5, Byram et al. discloses an electron tube in accordance with claim 3. Byram et al. further discloses that the tube further comprises a fluid cooling apparatus (see Figs. 1 and 2, item 45; column 5, lines 17-28) in thermal contact with an exterior of the tube (column 5, lines 25-28).

7. As to claim 7, Byram et al. discloses an electron tube in accordance with claim 5. Byram et al. further discloses that ceramic comprises a material selected from the group consisting of: aluminum oxide, beryllium oxide and aluminum nitride (column 3, lines 66-67 and column 4, line 1).

8. As to claim 8, Byram et al. discloses an electron tube in accordance with claim 3. Byram et al. further discloses that the tube further comprises a fluid cooling apparatus (see Figs. 1 and 2, item 45; column 5, lines 17-28) in thermal contact with an exterior of the tube (column 5, lines 25-28).

9. As to claim 9, Byram et al. discloses an electron tube (see Fig. 1; column 2, lines 66-67); including: a linear beam electron tube (see Fig. 1; column 3, lines 61-64); a vacuum envelope (see Fig. 1, item 10; column 3, lines 61-64; klystrons by definition contain a vacuum envelope) the vacuum envelope includes an electrically insulating wall portion (see Fig. 1, item 12; column 3, lines 64-66); a multistage collector (see Fig. 1, item 10; column 3, lines 61-63) including: a first electrode (see Fig. 1, item 16; column 4, lines 12-13) adapted to collect electrons (column 1, lines 26-29 and column 1, lines 47-50; collector electrodes are by definition electrodes in an electron tube that collects electrons that have finished carrying current) of a first energy level impacting the first electrode (column 1, lines 47-50) the first electrode formed on an inside portion of the insulating wall portion (see Fig. 1, item 12; column 4, lines 5-8); a second electrode (see Fig. 1, item 28; column 4, line 34-35) adapted to collect electrons (column 1, lines 26-29 and column 1, lines 47-50; collector electrodes are by definition electrodes in an electron tube that collects electrons that have finished carrying current) of a second energy level impacting the second electrode (column 1, lines 47-50); and an insulating portion (see Fig. 1, item 20; the space shown at item 20 is a space between two electrodes, the space between electrodes forms an insulating portion between the two electrodes) for electrically isolating the first and second electrodes from one another (the space between electrodes acts to electrically isolate the first from the second electrode); and an electrical path (see Fig. 1, item 22; column 4,

lines 20-23) coupling the first electrode to a terminal on an exterior of the tube (paragraph 4, lines 20-23).

10. As to claim 10, Byram et al. discloses the electron tube of claim 9. Byram et al. further discloses a metallization layer formed on the inside portion of the insulating wall portion (column 5, lines 1-4).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2, 4, 6 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byram et al. (U.S. 5,493,178; of record) in view of Delory et al. (U.S. 4,358,707; of record).

13. As to claim 2, Byram et al. discloses an electron tube (see Fig. 1; column 2, lines 66-67); including: an electrically insulating wall portion (see Fig. 1, item 12; column 3, lines 64-66); a multistage collector (see Fig. 1, item 10; column 3, lines 61-63) including: a first electrode (see Fig. 1, item 16; column 4, lines 12-13) adapted to collect electrons (column 1, lines 26-29 and column 1, lines 47-50; collector electrodes are by definition electrodes in an electron tube that collects electrons that have finished carrying current) of a first energy level impacting the first electrode (column 1, lines 47-50) the first electrode formed on an inside portion of the insulating wall portion (see Fig. 1, item 12; column 4, lines 5-8) and including a metallization layer formed

on the inside portion of the insulating wall portion (column 5, lines 1-4); a second electrode (see Fig. 1, item 28; column 4, line 34-35) adapted to collect electrons (column 1, lines 26-29 and column 1, lines 47-50; collector electrodes are by definition electrodes in an electron tube that collects electrons that have finished carrying current) of a second energy level impacting the second electrode (column 1, lines 47-50); and an insulating portion (see Fig. 1, item 20; the space shown at item 20 is a space between two electrodes, the space between electrodes forms an insulating portion between the two electrodes) for electrically isolating the first and second electrodes from one another (the space between electrodes acts to electrically isolate the first from the second electrode); and an electrical path (see Fig. 1, item 22; column 4, lines 20-23) coupling the first electrode to a terminal on an exterior of the tube (paragraph 4, lines 20-23). Byram et al. fail to disclose a cylindrical copper member including a plurality of circular disposed fingers and slots, the fingers affixed at a distal end thereof to the metallization layer.

In the same field of endeavor, Delory et al. discloses an electron tube (column 1, lines 7-8) with an insulating wall portion (see Fig. 1, item 5; column 1, lines 7-68 and column 2, lines 1-2). Delory et al. further discloses a cylindrical copper member (see Fig. 1, item 1; column 1, lines 58-60; also see Fig. 2 for the cylindrical shape) including a plurality of circular disposed fingers and slots (see Fig. 2, items 30 and 31; column 2, lines 6-16), the fingers affixed at a distal end thereof to the metallization layer (see Fig. 2, items 30 and 31; they are on the exterior of the copper member, which the examiner interprets as distal). Delory et al. further discloses that this arrangement allows for more efficient brazing of the copper tube to the insulating wall (column 1, lines 20-30).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the electron tube of Byram et al. to include a plurality of circular disposed fingers and slots, the fingers affixed at a distal end thereof to the metallization layer, as taught by Delory et al., to more efficiently braze the copper tube to the insulating wall.

14. As to claim 4, Byram et al. and Delory et al. disclose an electron tube in accordance with claim 2. Byram et al. further disclose that the electrically insulating wall portion comprises a ceramic material (column 3, lines 64-66).

15. As to claim 6, Byram et al. and Delory et al. disclose an electron tube in accordance with claim 4. Byram et al. further discloses that the tube further comprises a fluid cooling apparatus (see Figs. 1 and 2, item 45; column 5, lines 17-28) in thermal contact with an exterior of the tube (column 5, lines 25-28).

16. As to claims 11-13, Byram et al. discloses an electron tube in accordance with claim 9. Byram et al. fail to disclose a cylindrical copper member including a plurality of circular disposed fingers and slots, the fingers affixed at a distal end thereof to the metallization layer.

In the same field of endeavor, Delory et al. discloses an electron tube (column 1, lines 7-8) with an insulating wall portion (see Fig. 1, item 5; column 1, lines 7-68 and column 2, lines 1-2). Delory et al. further discloses a cylindrical copper member (see Fig. 1, item 1; column 1, lines 58-60; also see Fig. 2 for the cylindrical shape) including a plurality of circular disposed fingers and slots (see Fig. 2, items 30 and 31; column 2, lines 6-16), the fingers affixed at a distal end thereof to the metallization layer (see Fig. 2, items 30 and 31; they are on the exterior of the copper member, which the examiner interprets as distal). Delory et al. further discloses that this

arrangement allows for more efficient brazing of the copper tube to the insulating wall (column 1, lines 20-30).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the electron tube of Byram et al. to include a plurality of circular disposed fingers and slots, the fingers affixed at a distal end thereof to the metallization layer, as taught by Delory et al., to more efficiently braze the copper tube to the insulating wall.

17. As to claim 14, Byram et al. and Delory et al. disclose an electron tube in accordance with claim 12. Byram et al. further disclose that the vacuum envelope means comprises a ceramic material (column 3, lines 64-66).

18. As to claim 15, Byram et al. and Delory et al. disclose an electron tube in accordance with claim 13. Byram et al. further disclose that the vacuum envelope means comprises a ceramic material (column 3, lines 64-66).

Response to Arguments

19. In light of the applicant's amendment a new rejection has been given.

Pertinent Prior Art

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Miram et al. (U.S. 4,675,573) is prior art that teaches klystrons contain vacuum tubes (column 3, lines 38-41).

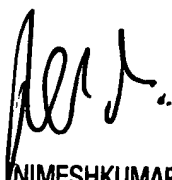
Contact Information

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Canning 
7 September 2006


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